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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)	
)	
Amendment of Parts 22, 90, and 94)	WT Docket No. 95-70
of the Commission's Rules to Permit)	RM-8200
Routine Use of Signal Boosters)	

DOCKET FILE COPY ORIGINAL

COMMENTS OF NEXTEL COMMUNICATIONS, INC.

NEXTEL COMMUNICATIONS, INC.

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Dated: August 14, 1995

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I. INTRODUCTION

Pursuant to Rule 1.415 of the Federal Communications Commission's ("Commission") Rules, Nextel Communications, Inc. ("Nextel") hereby files these Comments on the Notice Of Proposed Rule Making ("NPRM") in the above-captioned proceeding.^{1/}

The NPRM proposes to permit the use of signal boosters by Part 22 common carrier paging operators, Part 90 land mobile radio and paging operators, and Part 94 multiple address system operators. Signal boosters are intended to amplify a signal in a particular location within the operator's service area for the purpose of filling in dead spots, providing in-building coverage, or providing coverage in areas that otherwise would not be adequately served due to the terrain or man-made obstacles.

Nextel agrees that signal boosters can be "a viable and practical way to resolve signal coverage problems."^{2/} However,

^{1/} Notice Of Proposed Rule Making, RM-8200, FCC 95-204, released June 22, 1995.

^{2/} NPRM at para. 5.

Nextel also recognizes that the use of signal boosters in the Part 90 Specialized Mobile Radio ("SMR") service is significantly different than their use in the cellular industry due to the continuing differences in the licensing and operational rules governing each service. In authorizing signal boosters in the Part 90 land mobile radio services, the Commission must fully consider the potential problems created by boosting signals in a congested, often shared-frequency environment.

To implement the most effective use of signal boosters in the SMR service, the Commission must -- first and foremost -- create regulatory licensing parity for SMRs by providing for geographic-area licensing with a contiguous block of exclusive-use channels. In the interim, the Commission should authorize the use of signal boosters -- both broadband and narrowband -- by SMR operators, but only with proper notice requirements and other limitations that will help protect against harmful interference.

**II. SIGNAL BOOSTERS, WHILE A POTENTIAL BENEFIT
TO SMR OPERATORS, MAY CREATE HEIGHTENED INTERFERENCE
DUE TO CONTINUED LICENSING DISPARITIES
BETWEEN CELLULAR AND SMRS**

A signal booster, as described in the NPRM, is a device "that receives an incoming signal, amplifies it, and retransmits it on the same frequency . . . to improve communications in locations within the normal coverage area of a radio system where the signal is blocked or shielded due to natural terrain or man-made obstacles. . ."^{3/} The cellular industry currently makes effective

^{3/} NPRM at para. 2.

use of signal boosters. Given the large block of contiguous, exclusive-use channels on which cellular licensees operate, there is very little (if any) risk -- other than at the border of the service area -- that a cellular operator will inadvertently boost the signal of another operator.

In stark contrast is the SMR operator, operating on, for example, five non-contiguous channels, sharing them with other licensees in the area.^{4/} The use of a typical broadband signal booster would boost not only the licensee's authorized channels, but all others within the range of the broadband booster. This creates great potential for interference -- particularly in markets with a significant density of users in a congested geographic area. Given the proximity of operators transmitting on the same or similar frequencies, the employment of a broadband signal booster is very likely to boost the signal of another operator, thereby interfering with its services.^{5/}

As described above, a broadband signal booster receives several incoming signals, amplifies them, and then retransmits them on those same frequencies. In a cellular system, this is an

^{4/} Under the existing SMR licensing rules, a five-channel trunked SMR system is licensed on five separate channels spaced 1 MHz apart. A single five-channel system licensed on the upper 200 channels would have, for example, Channel 401, 441, 481, 521, and 561.

^{5/} For example, Operator A's signal booster could inadvertently increase the signal from Operator B's site(s), and thereby allow B's customers to operate their units outside B's authorized service area, causing interference to a co-channel licensee. While A's booster would not expand its own service area, thereby complying with the Commission's proposed rules, it could result in an unauthorized expansion of B's service area.

acceptable technology since a single cellular operator is licensed on all of those frequencies being retransmitted in that service area. However, because SMR operators are not licensed on contiguous channels throughout a geographic area, the broadband booster, as described above, may amplify and retransmit another operator's frequencies.

To avoid this, the industry could use narrowband signal boosters, which would amplify and retransmit only those frequencies it has been specifically designed to amplify while filtering out adjacent frequencies. Such narrowband boosters are not as readily available as broadband boosters, and likely would have to be custom-made for individual systems; but, they would be less likely to cause interference while effectively boosting the desired signals for in-building coverage or coverage of dead spots in an SMR system.

A. Geographic-Based Licensing On Contiguous Spectrum Is Necessary To Create Regulatory Parity Among SMRs and Other Commercial Mobile Radio Services Competitors

The most effective way to avoid these interference problems in the SMR industry, while providing SMR operators the same flexibility as cellular operators to employ boosters, is to provide the SMR industry with the Congressionally-mandated licensing parity that, by law, should have been completed August 10, 1994. Signal boosters are necessary to solve specific coverage challenges for operators, and they should be available to Part 90 licensees. Until SMRs have the licensing flexibility of cellular and PCS, they cannot take full advantage of flexible technological options, such

as signal boosters, that are available to other Commercial Mobile Radio Service ("CMRS") competitors.

True parity does not hinge on whether or not SMRs are allowed to employ a technology that ensures in-building coverage in a particular service area. True parity, as envisioned by Congress, requires a block of contiguous spectrum on which SMR operators can construct, implement, modify and operate systems on a geographic basis without the need for Commission approval for each and every base station therein. Once that is achieved, the use of signal boosters by SMR operators will be comparable to the cellular industry and will enhance competition among CMRS services.

B. Definition of "Signal Boosters"

In the NPRM, the Commission poses a very broad definition of "signal booster."^{6/} While this definition accurately describes the signal boosters currently employed in many cellular systems, it also encompasses other types of electronic devices designed to boost signals. For example, a "passive repeater," which is nothing more than the use of additional antennas intended to increase the signal gain at a particular site, would fit within the Commission's proposed definition. A "bi-directional amplifier," an active re-radiation device without the technological capability to discriminate among the frequencies it is boosting, would likewise fit the Commission's definition. The Commission should recognize that numerous devices can and will be employed by operators under the authority proposed herein. Thus, the Commission should ensure

^{6/} See NPRM at para. 2.

that its final rules are applicable to the use of any device that results in the amplification of a signal -- whether it be an active repeater, a passive repeater, or some other device.

C. Notification Requirement

Given the potential for harmful interference from signal boosters -- particularly in congested urban areas -- the Commission should impose a notice requirement on the use of signal boosters in the SMR services. While prior notice to the Commission will not prevent interference with other operators' systems, it should ease the process of determining the source of the interference. Licensees could readily access the Commission's database and determine what other licensees in the immediate geographic area are employing signal boosters and thereby determine the source of the interference.

Coupled with the notice requirement must be an explicit mandate that operators using signal boosters respond immediately to interference complaints from other licensees. Upon being notified of harmful interference, the user must immediately cease using the signal booster causing interference. Thereafter, the user may be permitted to reinstate the booster only if it can be engineered in a manner that will permit its use without causing interference. The rule should explicitly require that licensees employing signal boosters are responsible for correcting interference caused to the authorized operation of other SMR licensees.

D. Coverage Area

The Commission's rules must include language preventing the use of signal boosters in a manner that extends the authorized service area of the licensee. While the Commission's NPRM proposes this limitation, it fails to define "service area." Nextel proposes that the Commission should prohibit licensees from increasing a station's 40 dBu contour reliable service area with signal boosters. This should help ensure against harmful interference.


IV. CONCLUSION

Nextel supports the implementation of signal boosters in the SMR industry, provided the Commission moves expeditiously to take the necessary steps to achieve regulatory parity for SMRs, as mandated by Congress. In the interim, signal boosters should be authorized in the SMR service with adequate protections to ensure that their use, whether broadband or narrowband, does not cause harmful interference to nearby operators. Without these precautionary measures, the use of signal boosters in the SMR industry will result in harmful interference, thereby degrading --

rather than upgrading -- the quality of service SMR operators can provide their customers.

Respectfully submitted,

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CERTIFICATE OF SERVICE

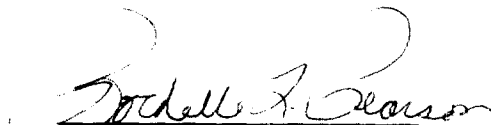
I, Rochelle L. Pearson, hereby certify that on this 14th day of August 1995, caused a copy of the attached Comments of Nextel Communications, Inc. to be served by hand delivery to the following:

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